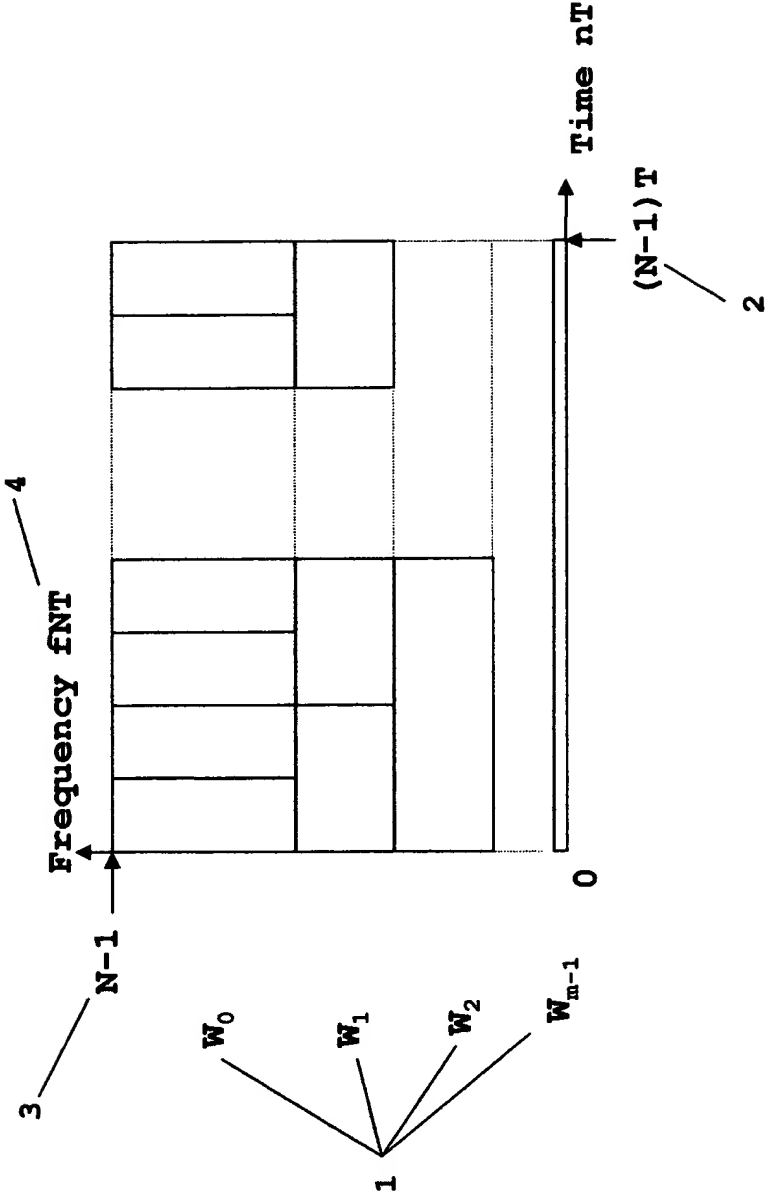


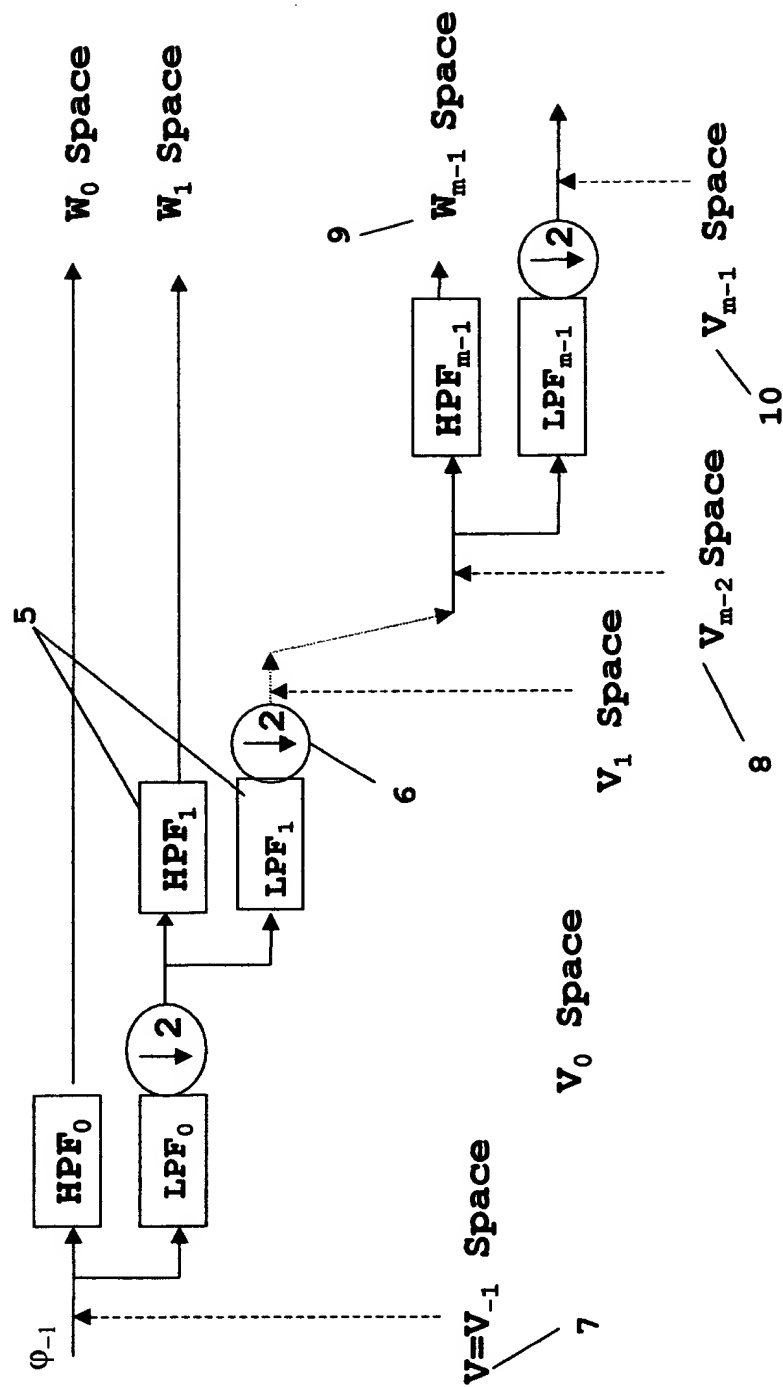
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**FIG. 1 Prior Art: Wavelet Tiling of an N-Point
Digital t-f Space**



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FIG. 2 Prior Art: Wavelet Iterated Filter Bank
for Tiling t-f Space in FIG. 1



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FIG. 3 PSD Requirements for Communications

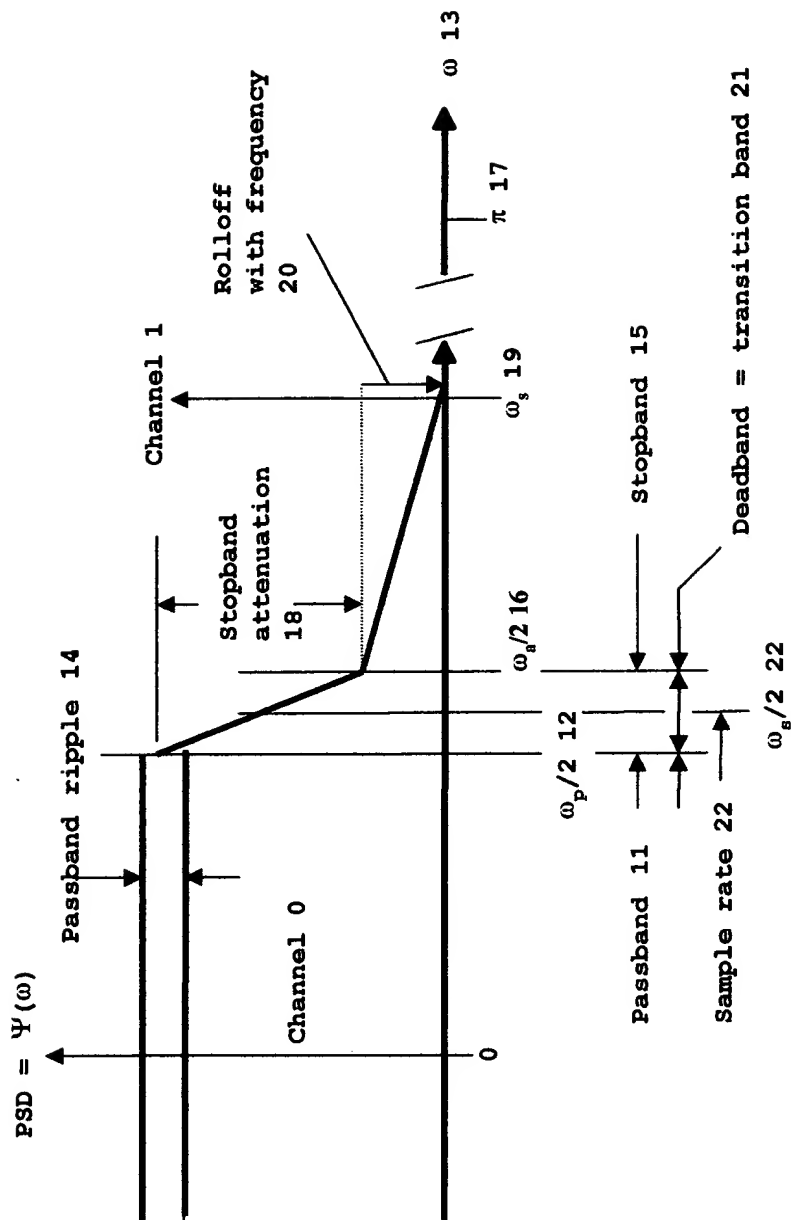
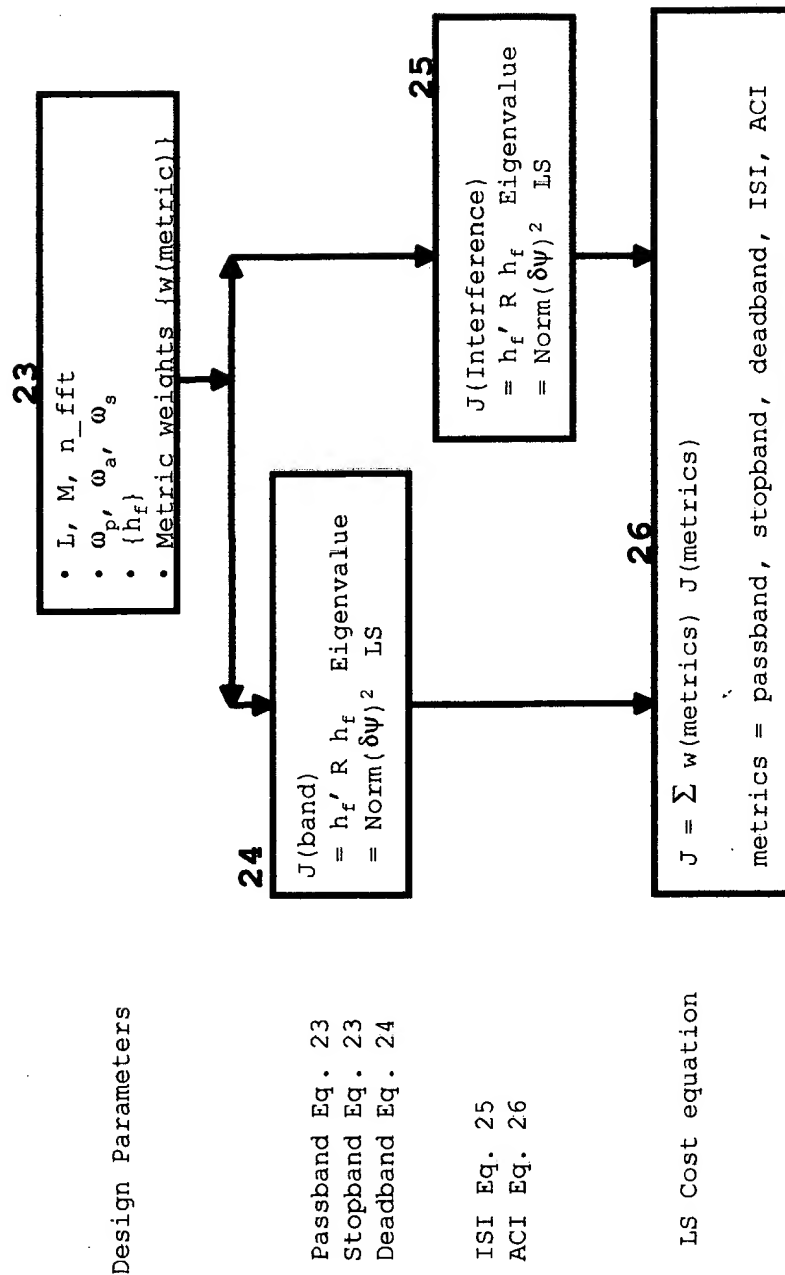


FIG. 4 LS Metrics and Cost Function



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FIG. 5 Mother Wavelet: Eigenvalue Algorithm

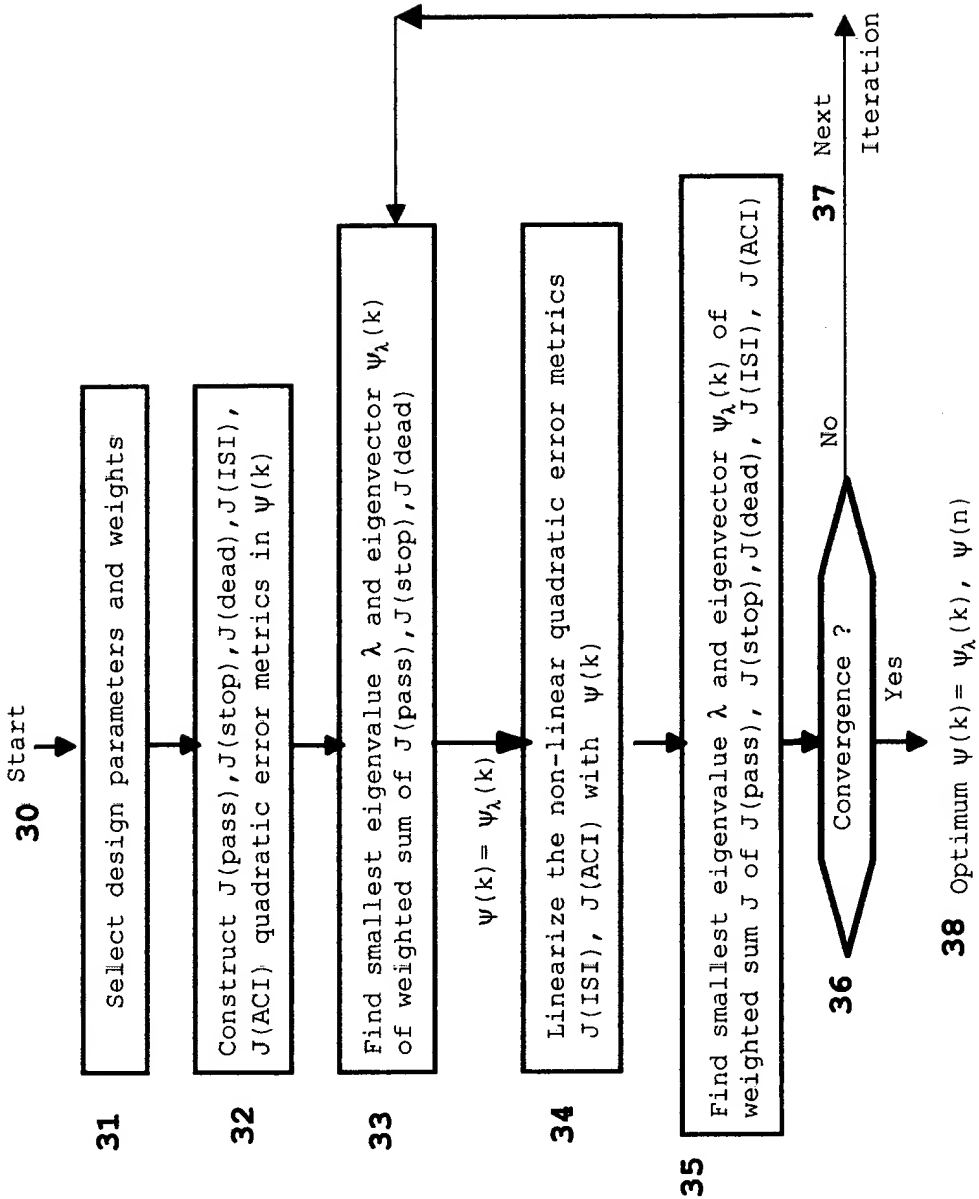


FIG. 6 Mother Wavelet: Gradient Search Algorithm

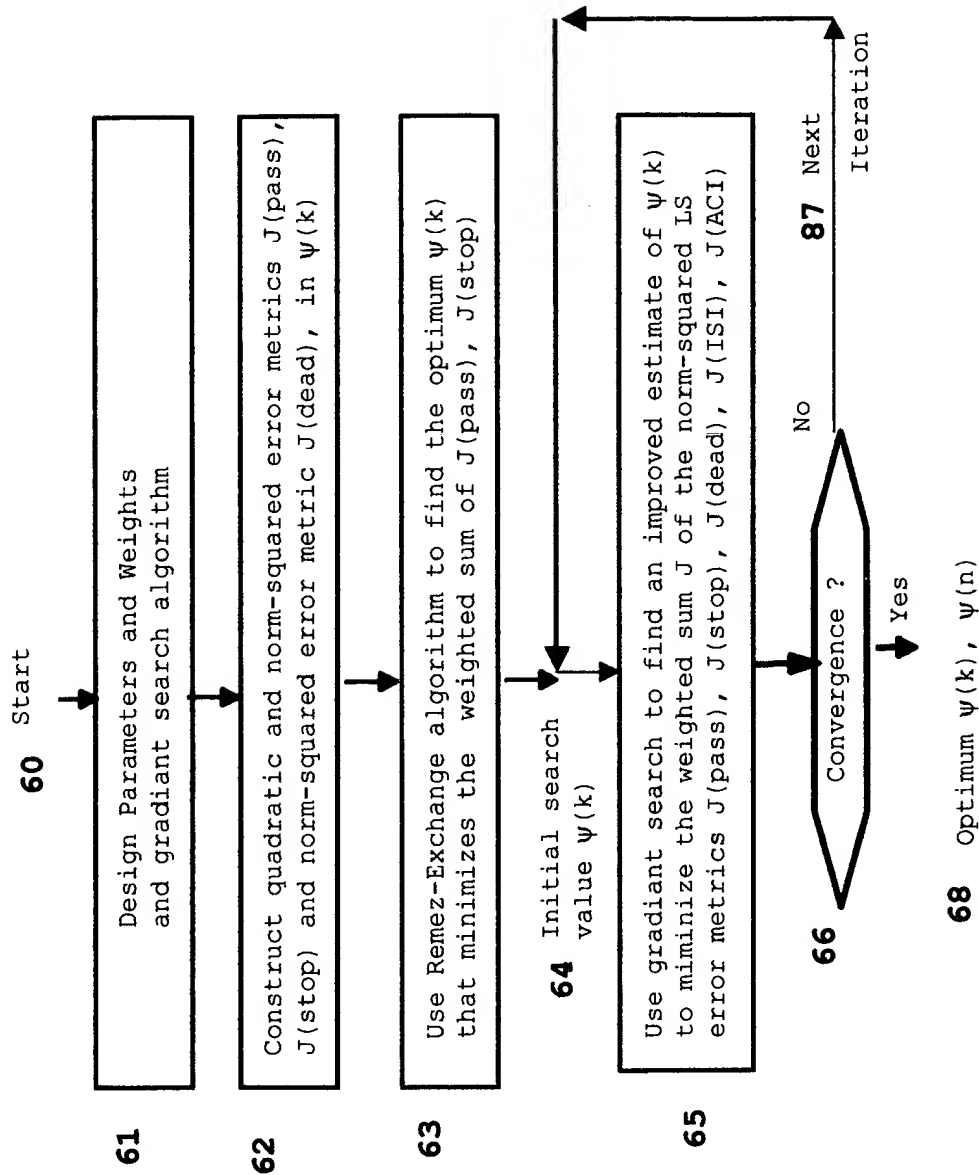
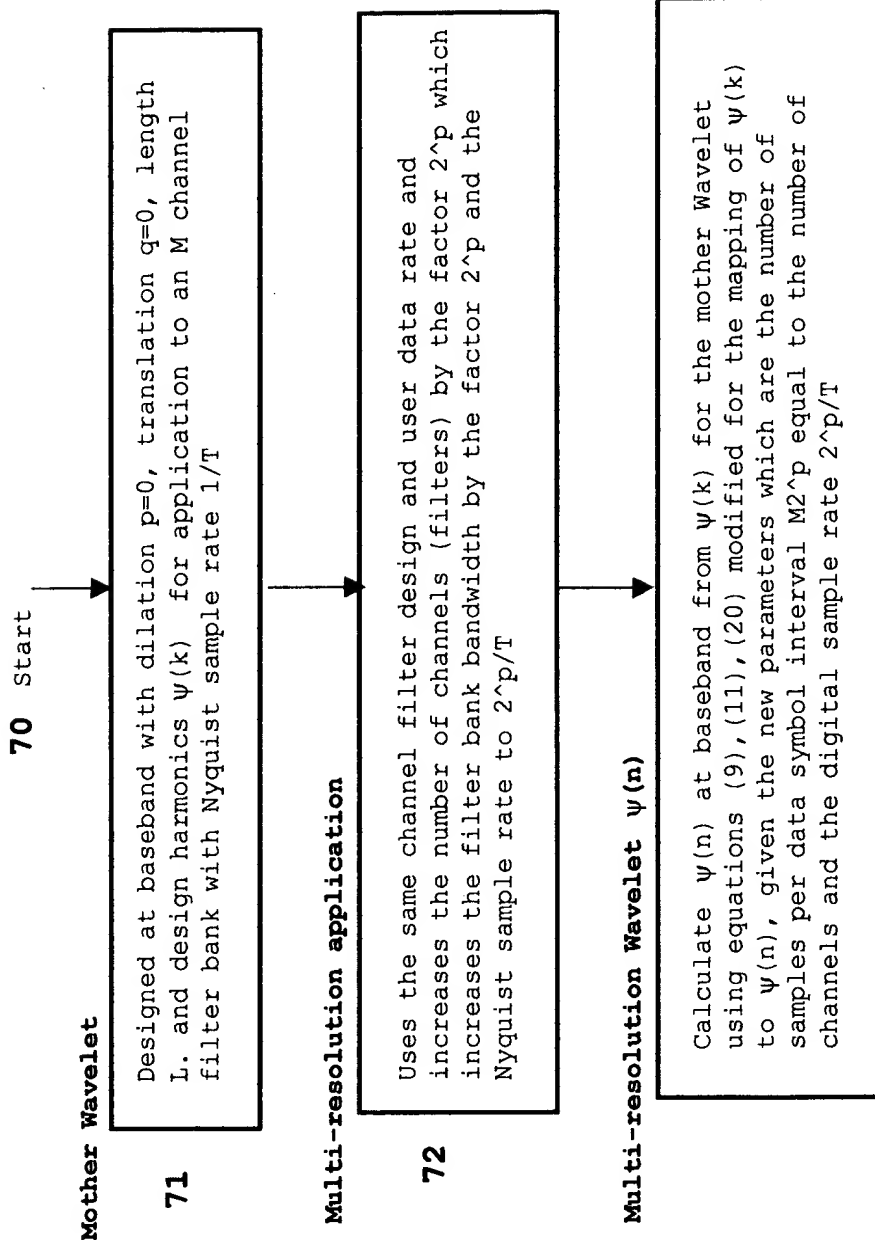
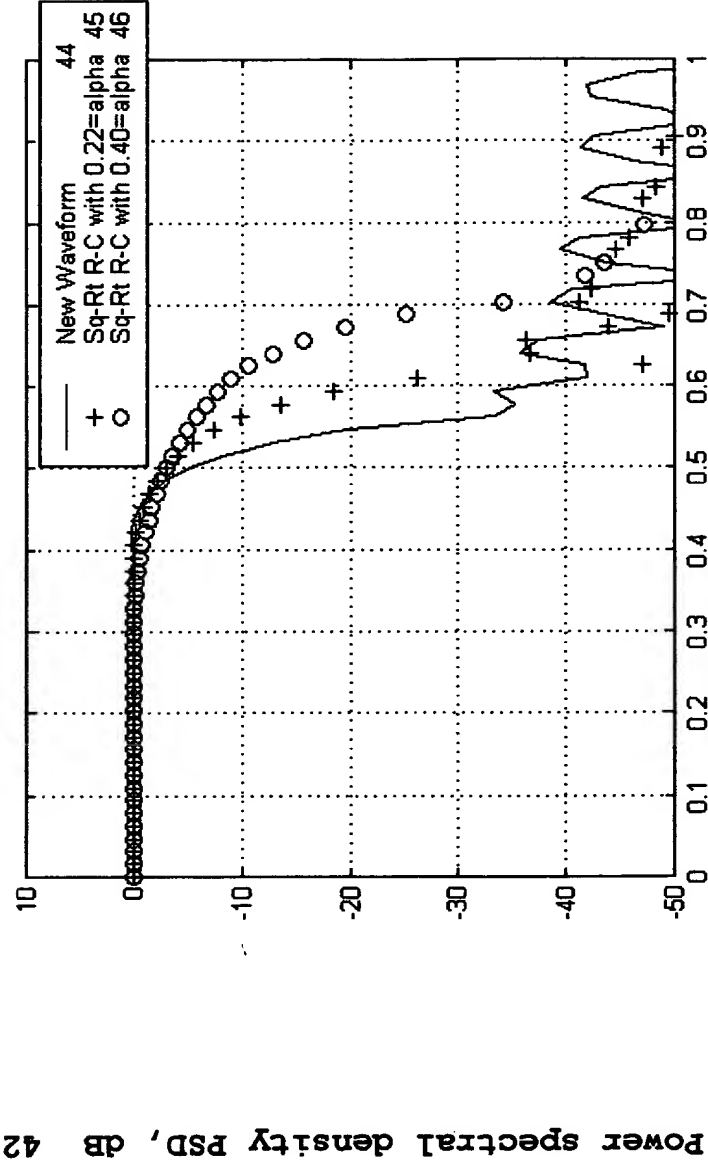


FIG. 7 Mother Wavelet: Multi-Resolution Algorithm



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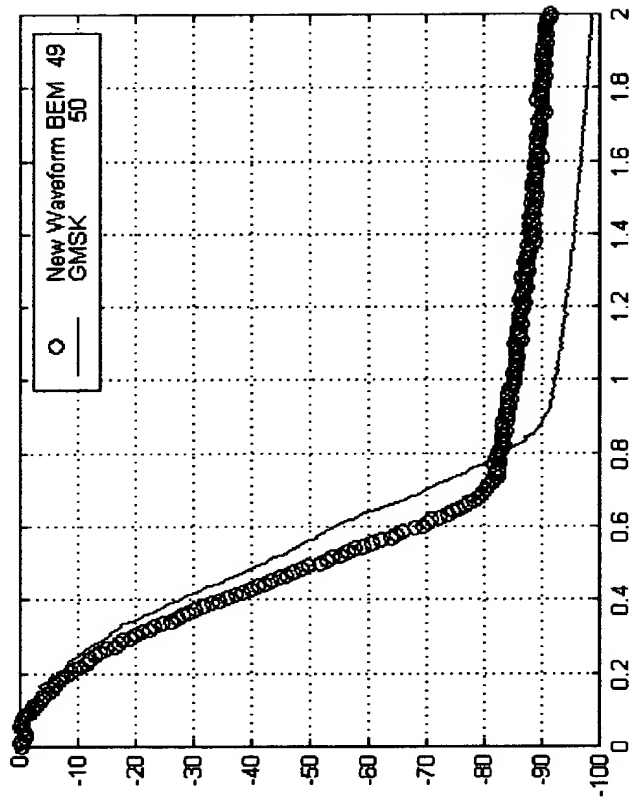
FIG. 8 PSD for New Waveform and Square-Root Raised-Cosine



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FIG. 9 PSD for New Waveform BEM 49 and GMSK

Power spectral density PSD, dB 47



Normalized frequency, bit rate 48

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**FIG. 10 Radar Ambiguity Functions of New Waveform
and Unweighted Chirp Waveform**

New Wavelet Ambiguity Function 51

Unweighted Chirp Ambiguity Function 52

